3:15

791-6 Soluble Fibrin as a Marker of Increased Risk in Acute Coronary Syndromes

M. Galvani, F. Ottani, D. Ferrini, R. Puggioni, S. Ruggeri, A. Destro, D. Baccos, P.R. Eisenberg [1]. *Fondazione Cardiologica Sacco, Forlì, Italy,* [1] *Washington University, St. Louis, MO, USA*

Increases in fibrin formation, reflected by elevations of fibrinopeptide A (FPA) levels, are associated with adverse outcome in patients with unstable angina (UA) and myocardial infarction (MI). Recently, assay of soluble fibrin has been proposed to be a sensitive marker of fibrin formation and less prone than FPA to artifact associated with sample acquisition. In this study we used a novel ELISA (Agen, Brisbane, Australia) based on a capture antibody specific for a neoepitope exposed on fibrin (γ 312–324) to measure soluble fibrin on admission in 159 patients with acute coronary syndromes (103 MI and 56 UA) presenting within 24 hours from the onset of symptoms and with ECG evidence of myocardial ischemia ($\geq$1 mm ST elevation [n = 82], $\geq$1 mm ST depression [n = 38], and T wave inversion [n = 39]). The prospectively defined end point of the study was death or non-fatal infarction/reinfarction during the hospital stay, which occurred in 19 pts (11.9%). There were no differences in soluble fibrin levels based on ECG criteria (median and quartiles: 2.3 [1.1–3.9] μg/ml – ST elevation, 2.7 [0.6–4.2] μg/ml – ST depression, 2.0 [0.7–3.6] μg/ml – T wave inversion; p = ns) or occurrence of MI (2.0 [0.9–3.8] μg/ml – MI, 2.9 [1.1–4.1] μg/ml – UA; p = ns). Soluble fibrin was significantly higher in patients with adverse events, 3.6 [1.5–8.6] μg/ml, vs those without, 2.1 [0.9–3.7] μg/ml (p = 0.04). The risk of an event was markedly increased in patients with the highest tercile of soluble fibrin levels, 7.5% lower tercile, 7.5% middle, 20.7% highest (p = 0.04). The relative risk of death or non-fatal infarction in the highest tercile was 1.92 (1.21–3.06) (95% CI). Increases in soluble fibrin identify patients with unstable coronary syndromes at high risk for adverse events who may be candidates for more aggressive antithrombotic therapy.

792 Interventional Cardiology: Long-Term Outcome

Wednesday, March 19, 1997, 2:00 p.m.–3:30 p.m.
Anaheim Hilton and Towers, Pacific C

2:00

792-1 Operator Volume and Outcomes in 12,899 Percutaneous Coronary Interventions

P.D. McGrath, D.E. Wennberg, D.J. Malenka, J.D. Dickens, M.A. Kellett, T.J. Ryan, Jr., W.A. Bradley, M.J. Hearne, J.F. Robb, S. Shubrooks, P. VerLee, M.W. Watkins, G.T. O'Connor for the Northern New England Cardiovascular Disease Study Group. *Lebanon, NH*

Controversy exists regarding the relationship between individual operator volume and outcomes in percutaneous coronary interventions. Accordingly, we analyzed a prospectively collected database involving 12,899 interventions performed by 31 cardiologists at 5 hospitals from 1/2/90 through 12/29/93. Overall outcomes for the group were (%): angiographic success = 89.1, clinical success = 88.9, new MI = 2.3, emergency CABG = 2.2, death = 1.0.

Interventionalists were categorized by terciles based on annualized volumes. Median {range} per year: low tercile = 68 {23–85}, middle tercile = 102 {89–143}, high tercile = 221 {153–450}. Univariate analyses were used to select variables for logistic regressions. Included in the models were combinations of age, gender, device, comorbidity, EF, priority, and anatomy as independent variables.

Multivariate Analysis Odds Ratios (95% CI)

Outcome	Low Tercile	Middle Tercile	High Tercile
Angiographic Success	1.0	1.2 (1.0, 1.4)	2.0 (1.6, 2.6)
Clinical Success*	1.0	1.2 (1.0, 1.5)	1.6 (1.3, 2.1)
Emergency CABG	1.0	0.8 (0.6, 1.2)	0.5 (0.3, 0.8)
Death	1.0	0.9 (0.5, 1.7)	0.8 (0.4, 1.9)

*$\geq$1 lesion dilated to <50% stenosis and no MI, CABG, or death

In this large database, high volume operators were more likely to achieve angiographic and clinical success and avoid emergency CABG with no significant difference in rates of MI or death.

2:15

792-2 Anatomical vs. Functional Complete Revascularization In Patients with Multivessel Disease; 1 year follow-up in the Multivessel PTCA Multicenter Study

M. Funamoto, O. Katoh, T. Kobayashi, H. Nishikawa, H. Tamai, T. Suzuki for the Multivessel PTCA Multicenter Study Group. *Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan*

It is still unknown whether revascularization of diseased vessels (DV) without ischemia according to Tl-scintigraphy (Tl) affects clinical outcome or not in the pts with multivessel disease (MVD). The aim of this study is to compare long-term outcome of anatomic (ACR) and functional (FCR) complete revascularization (CR) by PTCA in pts with MVD. ACR means CR of all DV regardless of ischemia and FCR is defined as CR of only ischemia proved by Tl. Study enrollment ended in February 1995. In 4 institutions, 586 pts met this inclusion criteria [LMT < 50% stenosis, more than two major diseased vessels including chronic total occlusion (CTO), age <75 yo., no prior intervention or CABG]. Of these, 96 pts were randomized into two groups; ACR (49 pts) and FCR (47 pts). This study is to be conducted for 5 years after enrollment. All pts will undergo coronary angiography (CAG) and Tl at 1, 2 and 3 year follow-ups (Y). There were no differences in baseline data between ACR and FCR [mean age; 62: 61, male; 72: 86%, prior MI; 67: 64%, CTO; 52: 57%, 3 vessel disease; 33: 50%, EF; 54: 58% (ACR: FCR)]. Initial success rates of CR were 94% (ACR) and 96% (FCR). No differences in major in-hospital complications could be found between 2 groups. 1 Y follow-up rate is 98% (ACR, FCR). There were no differences in cardiac events between 2 groups [CABG; 2: 0%, AMI; 8: 7%, death; 4: 4% (ACR: FCR)]. No need for further revascularization was 20: 30% (ACR: FCR). Total event free ratio is 85: 91% (ACR: FCR). EF at 1 Y was 59: 54% (ACR: FCR).

Conclusion: At 1 Y, there were no clinical or angiographical differences between ACR and FCR.

2:30

792-3 Target Lesion Revascularization Following Coronary Angioplasty: A Report from the NHLBI PTCA Registry

C.R. Cannan, D.O. Williams, H.A. Cohen, W. Yeh, S.F. Kelsey, K.M. Detre. *Rhode Island Hospital, Brown University, Providence, Rhode Island, USA, University of Pittsburgh, Pittsburgh, Pennsylvania, USA*

The need to perform target lesion revascularization (TLR) for restenosis is more representative of the clinical and economic impact of restenosis following PTCA than angiographic evidence of lesion recurrence. To characterize and identify predictors of TLR, we analyzed 9-year outcome of 2262 pts in the NHLBI PTCA Registry. TLR was performed in 510/2262 (22.5%) pts. Time from PTCA to TLR ranged from 1 to 2897 days, median 180 days. TLR was by PTCA in 313/510 (61.4%) and CABG in 197/510 (38.6%). Median time to PTCA and CABG differed, 134 and 841 days, respectively (p < 0.05).

	Adjusted Odds Ratio	95% C.I.
Predictors for TLR		
Female	0.77**	(0.65, 0.92)
Diabetes Mellitus	1.58***	(1.31, 1.90)
Triple Vessel Disease	1.28**	(1.10, 1.49)
Predictors for CABG		
TLR Performed >1 yr	5.75***	(4.06, 8.13)
Multivessel Disease	1.57*	(1.07, 2.20)
High % Stenosis Post PTCA	1.23***	(1.13, 1.33)

*p < 0.05, ** p < 0.01, *** p < 0.001

Thus, TLR was observed in 1/5 patients. TLR was more common in males, diabetics and pts with advanced coronary disease. The extent of coronary disease, timing of TLR and PTCA result influenced whether CABG or PTCA was chosen as the means of TLR. Pts at increased risk for TLR can be identified and should be considered for new therapies directed to reduce the development of restenosis.

2:45

792-4 Counselling Patients on Likelihood of Restenosis Following Coronary Angioplasty: Trial Data Versus Clinical Practice

M.M. Gandhi, R.H. Swanton. *Department of Cardiology, The Middlesex Hospital, London, UK*

Prior to coronary angioplasty (PTCA), patients are informed of the potential for restenosis and need for additional revascularization. A recent meta-analysis of randomized trials of PTCA and the Benestent study suggest that 34% and